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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

Board of Regents, The University of Texas System, and 3D Systems, Inc. Plaintiffs, v. EOS GmbH Electro Optical Systems, Defendant.	§ § § § § § § § § §	Civil Action No. A03 CA 113SS

PLAINTIFFS' CONCISE STATEMENT OF ALLEGED INFRINGEMENT

Plaintiffs Board of Regents, The University of Texas System and 3D Systems, Inc. submit this statement of alleged infringement of the patents-in-suit – United States Patent Nos. 5,639,070 and 5,597,589 – a required by the Court's June 4, 2003 Scheduling Order.

I. BACKGROUND OF THE INVENTIONS CLAIMED IN THE PATENTS-IN-SUIT

The patents-in-suit relate to a technology known as selective laser sintering, which is part of the larger field of Solid Freeform Fabrication ("SFF"), sometimes called Rapid Prototyping ("RP"). As the name "rapid prototyping" suggests, it began as a way of rapidly producing a prototype of a design so that the two-dimension drawing could be turning into a three-dimensional prototype directly from a computer aided design (or "CAD") file. It has also been used to create patterns for investment casting applications and, more recently, has been used as a way of producing small quantities of finished parts (or "direct manufacturing").

Selective laser sintering was first commercialized by DTM Corporation ("DTM") – based here in Austin, Texas – in the early 1990s, and its products were based upon research conducted in the late 1980s at the University of Texas, Austin ("UT"). UT licensed its selective laser sintering patents to DTM. 3D Systems acquired DTM in August of 2001, and thus is the current

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exclusive licensee on the UT selective laser sintering patents, including the two being asserted here.

Selective laser sintering, like other RP technologies, is an additive manufacturing technique wherein three-dimensional parts are created layer by layer from a "build" material such as nylon powder. Computer software takes a conventional CAD drawing and creates a series of "slices," mere millimeters thick, from the bottom to the top of the part to be built. The selective laser sintering machine then builds the part one slice at a time, using a computer controlled laser that directs its laser light beam across the surface of a bed of laser sintering powder in the two-dimension geometry of the first slice (or layer) to cause the powder in that geometry only to melt. Another appropriately-thick layer of the powder is then spread across the first layer, and the laser light beam fuses that powder in the two-dimensional geometry of the second layer, which fuses to the first layer where there is overlap, and so on, until the entire part has been constructed in this layer-wise fashion.

When DTM introduced the first selective laser sintering machines in the early 1990s, it faced a challenging task. Broad industry acceptance of any new technology is not easy to obtain, and laser sintering was no exception. In this, however, DTM again led the way by devoting significant resources around the world to convincing potential customers to try its new technology. DTM's success in convincing several Fortune 500 companies to use laser sintering, and DTM's efforts that ensured the success of their experience, were instrumental in establishing laser sintering as a commercially viable technology. Selective laser sintering is now one of the two leading RP technologies in the world.

Defendant EOS GmbH Electro Optical Systems ("EOS") is the only other manufacturer of laser sintering machines in the world. From its base in Germany, it has followed and copied

DTM every step of the way, benefiting greatly from the UT's and DTM's pioneering efforts. Until recently, however, EOS had not sold its infringing laser sintering machines into the United States. That first sale (to UT and 3D Systems' knowledge) was recently made, resulting in the filing of this lawsuit.

II. CLAIM CHARTS

The claim charts that follow identify each of Plaintiffs' asserted claims, and generally how each claim is infringed by EOS's laser sintering machines, including the EOSint P350/360, EOSint P380 and EOSint P700 machines. Of course, Plaintiffs have not received discovery from Defendant, and thus, this Statement is based upon Plaintiffs' best knowledge, information and belief. Plaintiffs reserve the right to supplement the positions briefly set forth in these claim charts based upon any further understanding they may gain as to how Defendant's machines are constructed or operate, based on claim construction, based upon further analysis, or based upon further information obtained during discovery.

Plaintiffs do not concede or admit that any entry in the charts constitutes an element or limitation of the associated claim. The charts merely set forth the infringing aspects of Defendants' machines, and do not take any position as to claim construction or whether certain claim terms are to be construed using the provision of 35 U.S.C. § 112, paragraph 6.

Literal infringement is asserted as well as infringement pursuant to the doctrine of equivalents because the identified component(s) of Defendant's machines are insubstantially different from the associated portion of the claim appearing in the charts. Defendant's machines directly infringe, and have contributed to, continue to contribute to and induce infringement of the patents-in-suit under 35 U.S.C. §§ 271, *et seq.* by virtue of its importation, offers to sell and

sales of machines which infringe the methods covered by the '070 patent, and the apparatus covered by the '589 patent, as indicated below.

Claim Chart -- United States Patent No. 5,639,070

Claim 1	***Analysis***
A method of producing a part from a powder, comprising the steps of:	EOSint P machines produce parts from, for example, polyamide and polystyrene powders.
depositing a first layer of the powder at a target surface;	EOSint P machines deposit a first layer powder at a target surface using, for example, a slot feeder.
directing energy at selected locations of said first layer of powder corresponding to a first cross-section of the part to fuse the powder thereat, with unfused portions of the first layer of powder remaining in place;	EOSint P machines direct energy at selected locations of a first layer of powder corresponding to a first cross-section of the part to fuse the powder thereat. The unfused portions of the powder remain in place.
depositing a second layer of powder over both the fused and remaining unfused portions of the first layer after said directing step, so that the second layer of powder is supported by fused and remaining unfused portions of said first layer of powder;	EOSint P machines deposit a second layer of powder over the fused and remaining unfused portions of the first layer so that the second layer of powder is supported by fused and remaining unfused portions of the first layer of powder.
after the depositing step, heating the second layer of powder to a temperature below the sintering temperature of the powder, to moderate a temperature difference between the second layer of powder and fused portions of the first layer of powder there beneath; and	EOSint P machines heat the second layer of powder to a temperature below the sintering temperature of the powder following the depositing step to moderate the temperature difference between the second layer of powder and fused portions of the first layer of powder.
directing energy at selected locations of said second layer of powder corresponding to a second cross-section of the part to fuse the powder thereat, and so that fused powder at one of said selected locations of said second layer of powder fuses to fused powder in said first layer.	EOSint P machines direct energy at selected locations of a second layer of powder to fuse the powder thereat. The fused powder at one of the selected locations of the second layer of powder fuses to the fused powder in the first layer.
Claim 2	***Analysis***
The method of claim 1, wherein said step of directing energy at selected locations of said second layer of powder comprises:	*See* analysis for Claim 1, above.

directing a laser beam at selected locations of said second layer of powder to provide, in combination with the heating step, the heat of fusion of the powder.	EOSint P machines have at least one laser which directs laser beams at selected locations of the second layer of powder to provide, in combination with the heating step, the heat of fusion of the powder.
Claim 3	***Analysis***
The method of claim 1, wherein said heating step heats the powder at the target surface.	*See* analysis for Claim 1, above. EOSint P machines heat powder at the target surface.
Claim 7	***Analysis***
The method of claim 1, wherein said heating step is performed to moderate temperature differences in the sintered and unsintered powder.	*See* analysis for Claim 1, above. EOSint P machines heat the powder to moderated temperature differences in the sintered and unsintered powder.
Claim 9	***Analysis***
The method of claim 1, further comprising:	*See* analysis for Claim 1, above.
repeating the steps of depositing, heating, and directing for a plurality of layers following the second layer of powder.	EOSint P machines repeat the steps of depositing, heating, and directing for a plurality of layers following the second layer of powder.

Claim Chart -- United States Patent No. 5,597,589

Claim 1	***Analysis***
An apparatus for producing a part from a powder, comprising:	EOSint P machines produce parts from, for example, polyamide and polystyrene powders.
means for successively dispensing a plurality of layers of powder at a target surface;	EOSint P machines deposit a first layer powder at a target surface using, for example, a slot feeder.
an energy source;	EOSint P machines have an energy source, for example, at least one laser.
a controller for directing the energy source at locations of powder at the target surface corresponding to cross-sections of the part to be produced therein and fusing the powder thereat; and	EOSint P machines have a controller for directing the energy source at locations of powder at the target surface corresponding to cross-sections of the part being produced and fusing the powder thereat.
temperature control means for moderating the temperature difference between unfused powder in a topmost layer of powder at the target surface and fused powder in the one of the plurality of layers of powder immediately beneath the topmost layer.	EOSint P machines have a temperature control means for modulating the temperature difference between unfused powder in a topmost layer of powder at the target surface and fused powder in one of the plurality of layers of powder immediately beneath the topmost layer.

Dated: June 19, 2003

Respectfully submitted,

Philip E. Cook, by permission EQBF

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was sent via facsimile and United States certified mail, return receipt requested to the following counsel of record on this 19th day of June, 2003.

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